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A 5-year retrospective analysis of Mantoux test positivity in a tertiary hospital in Northeastern Nigeria

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Background: Mantoux test was introduced over century ago, is still used as a laboratory test in epidemiological studies of Mycobacterium tuberculosis infection (MTI) in most developing countries. Mantoux test is based on simple application but it could be limited by high false positive results. The cost limits the application of newer techniques. Therefore, we analyzed retrospectively the Mantoux test positivity in relation to clinical details suspected of MTI over 5-year period.

Methods: The 5-year retrospective study was carried out in the Department of Immunology and Infectious Diseases, University of Maiduguri Teaching Hospital, between 1999-2003. Data extracted were of patients with various clinical details of which Mantoux test requested. Mantuox test induration diameter of > 5 mm is scored positive.

Results: Of 3218 patients examined, positive results recorded in 1532 (47.6%): 980 (30.1%) males and 562 (17.5%) females. Age-group distribution, 21-40 (27.0%), < 20 (11.6%), 41-60 (7.2%) and > 60 years (1.7) ($p < 0.05$). Mantoux induration diameter, 10-15 mm (24.2%), >15 mm (15.8%) and 5-9 mm (7.6%) ($p < 0.05$). Of 17 classified clinical details examined, positive Mantoux reactions were recorded in 13 cases (76.5%, 13/17). Pulmonary tuberculosis (518/1074, 48.2%), extra pulmonary tuberculosis (146/270, 54.1%), Pott's diseases (144/236, 61.0%), low back pain (94/132, 71.2%), orthoarthritis (26/42, 61.9%), retroviral infection (60/142, 42.3%), cervical lymphadenitis (24/44, 54.5%), fever/rashes (2/10, 16.7%), bronchopneumonia (54/184, 29.0%), weight loss (154/404, 37.6%), lymph node enlargement (26/54, 48.1%), others (186/428, 43.0%) and routine examination (100/160, 62.5%). Comparison of other details with PTB indicates that possibility of Mantoux test positivity is higher in Pott's disease [OR (95% CI) = 1.33 (1.12-1.57), p = 0.0001], Low back pain [OR (95%CI) = 1.80(1.367—2.36), p = 0.0001], and routine examination [OR (95%CI) = 1.38 (1.121-1.70),p = 0.001], while it is similar in extra-pulmonary tuberculosis [OR (95%CI) = 1.13 (0.98-1.29),p = 0.089], orthoarthritis [OR (95%CI) = 1.36 (0.92-2.01), p = 0.086], retroviral infection [OR (95%CI) = 0.90 (0.77-1.04),p = 0.21], cervical lymphadenitis [OR (95%CI) = 1.14 (0.82-1.58),p = 0.44], lymph nodes enlargement [OR (95%CI) = 1.00 (0.77-1.30), p = 0.99].

Conclusion: High Mantoux test positivity was recorded in diverse clinical details examined indicating different clinical presentations of MTI. Thus, utilization of this laboratory test should be collaborated with clinical indices and other tests to guide against false-positive results.

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Antiretroviral therapy improves survival in patients with HIV and multi-drug resistant tuberculosis

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Background: South Africa has the fourth highest burden of multi-drug resistant tuberculosis (MDR TB) globally, further complicated by the high prevalence of HIV co-infection resulting in high morbidity and mortality. This study assessed the impact of combining antiretroviral therapy (ART) with TB treatment, on mortality in HIV-infected patients with MDR TB.

Methods: In the SAPiT (Starting Antiretroviral therapy at three Points in TB treatment) study, a randomised controlled trial of HIV–TB coinfected patients, sputum culture and susceptibility for *Mycobacterium tuberculosis* was performed on 489 of the 642 patients enrolled. A sub-group of 23 (4.7%) patients with MDR TB (resistance to at least isoniazid and rifampin) were identified. Clinical outcomes at 18 months of follow-up were compared in patients randomized to receive ART within 4-12 weeks of tuberculosis treatment initiation (combined integrated treatment arm), with those who commenced ART after completing tuberculosis treatment (sequential treatment arm). The primary endpoint was death.

Results: Demographic, clinical and laboratory characteristics of 14 patients in the combined integrated treatment arm and the 9 patients in the sequential treatment arm with MDR TB were similar. The incidence rate of death was 11.8 (2/14) and 56.0 (5/9) per 100 person-years in the combined integrated treatment arm and sequential treatment arm respectively (IRR 0.21; 95% CI: 0.02–1.29; $P = 0.06$).

Conclusion: Early ART initiation in TB patients with MDR TB reduced mortality despite late diagnosis and late initiation of appropriate treatment of the MDR TB. This survival benefit complements the mortality reductions observed with early ART initiation in all other HIV-TB co-infected patients.

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